Service Manual
for
CP-20/30/40
Chart Projector

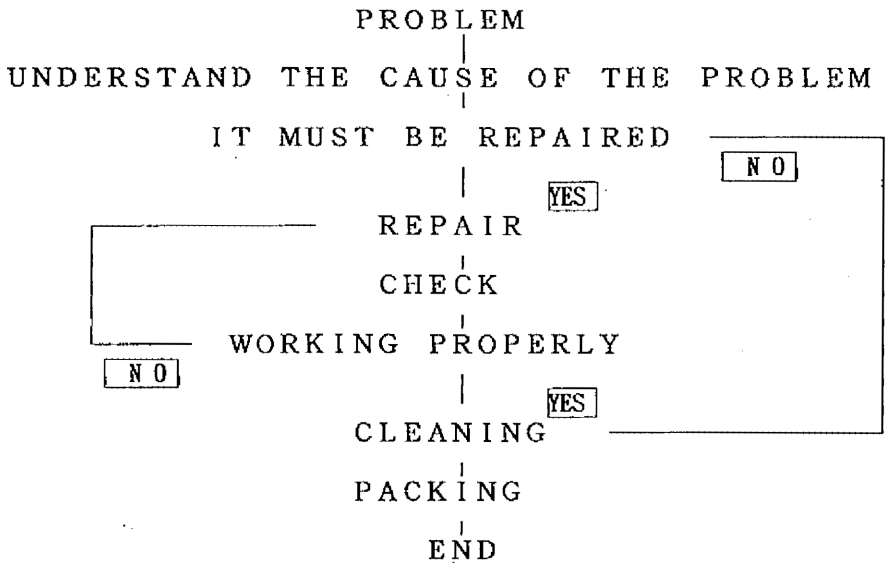
SHIN-NIPPON

CP-40 ITEMS OF REPAIR MANUAL

1. DISASSEMBLING OF THE LOWER CASE
2. DISASSEMBLING OF THE UPPER CASE
3. CHANGING THE WAVE LENGTH
4. HOW TO CHANGE THE CONDENSER LENS
5. HOW TO CHANGE THE REFLECTION MIRROR
6. HOW TO CHANGE THE CHART BOARD
7. HOW TO CHANGE THE PC BOARD
8. HOW TO CHANGE THE POWER SOURCE BOARD
9. HOW TO CHANGE THE MAIN SWITCH
10. HOW TO CHANGE SENSOR
11. HOW TO ADJUST THE CHART BOARD AND THE MASK BOARD
12. DISASSEMBLING OF THE VARIABLE POWER LENS BARREL

HOW TO USE THE REPAIR MANUAL

(1) Please keep in mind the followign procedure before repairing.



(2) Please disassemble, repair, assemble and adjust the optical system in clean surroundings so the machine will not be damaged by dust.

(3) When repairing, be sure to follow the instructions of this manual using the correct materials and implements.

(4) For the hardware, replace by part. For the electric system,and the optical system, replacements are basically executed by unit.

(5) As for the disassembling and assembling of parts not mentioned in this manual, refer to the service part list.

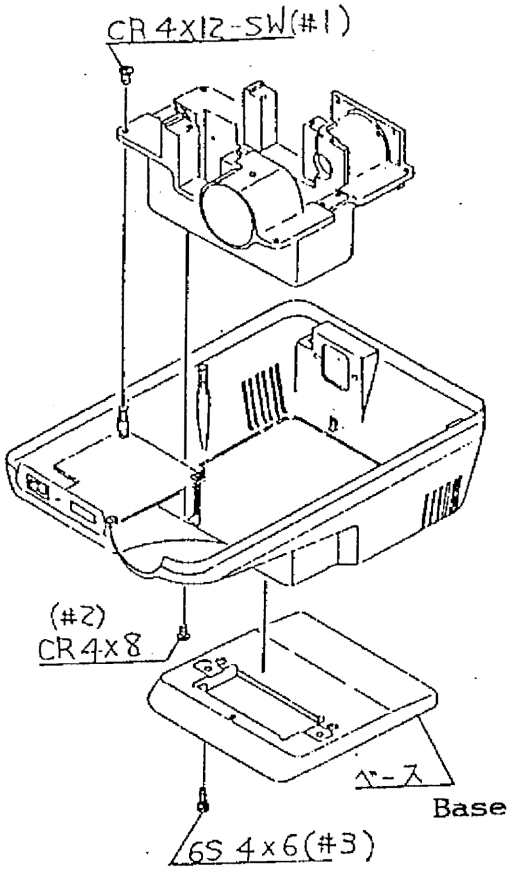
(6) Do not use any other lubricant than the one mentioned.

(7) Order a replacement part referring to the servie part list.

2. PRACTICAL REPAIR

(Procedure of disassembling, checking, and adjusting)

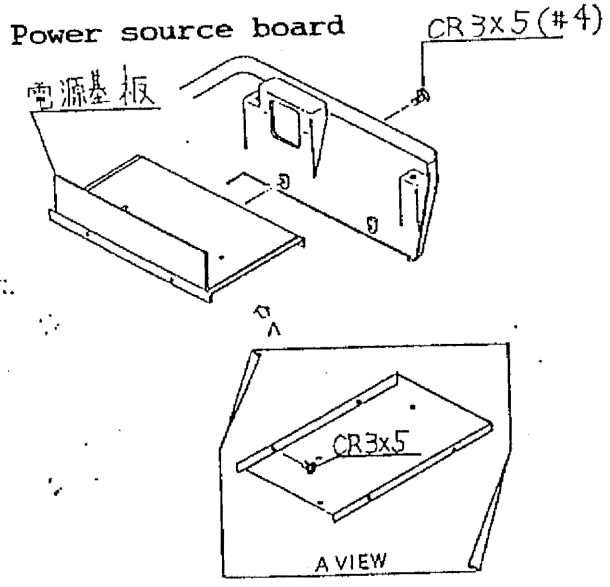
Sketch



Procedure

(1)Disassembling of the lower case

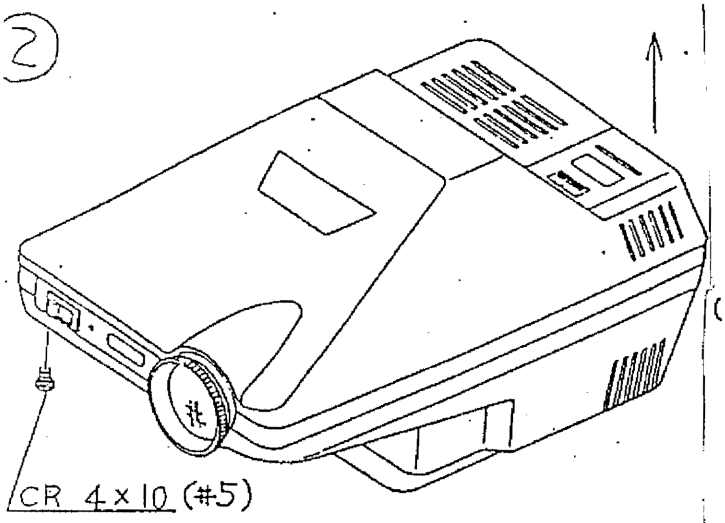
1. Remove the 6S 4x6(#3) screw and remove the base.
2. Pull out the connectors on the P.C. board and the power source board.
3. Remove the four CR 3x5(#4) screws.
4. Remove the CR 4x12-SW(#1) screw.
5. Remove two CR 4x8(#2) screws.

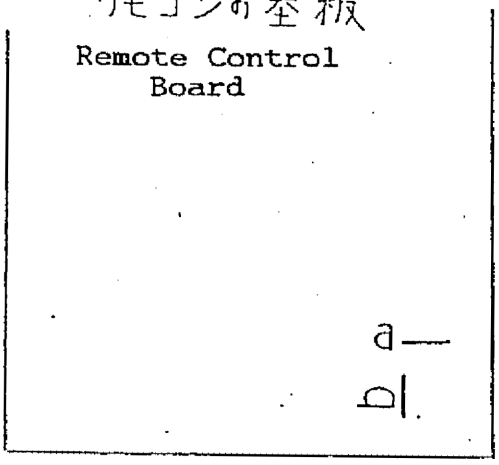


(2)

2. PRACTICAL REPAIR
(Procedure of disassembling, checking, and adjusting)

Sketch





Procedure

(2)Disassembling of the upper case

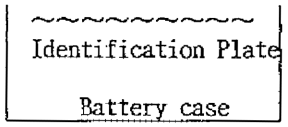
1.Remove the CR 4x10(#5)

2.Remove it from the back side of the case in the direction of the arrow

(3)Changing the wave length

*Remote control side

1.Remove the batteru from the case
2.Remove the TCB2x8 screw which is on the opposite side of the remote control.
3.Slide the back caase back



4.When removing the back case, the board of remote control appears and the wave length can be changed by a,b.

* Machine side

1.Implemented with the dipswitch on the board.

Sketch

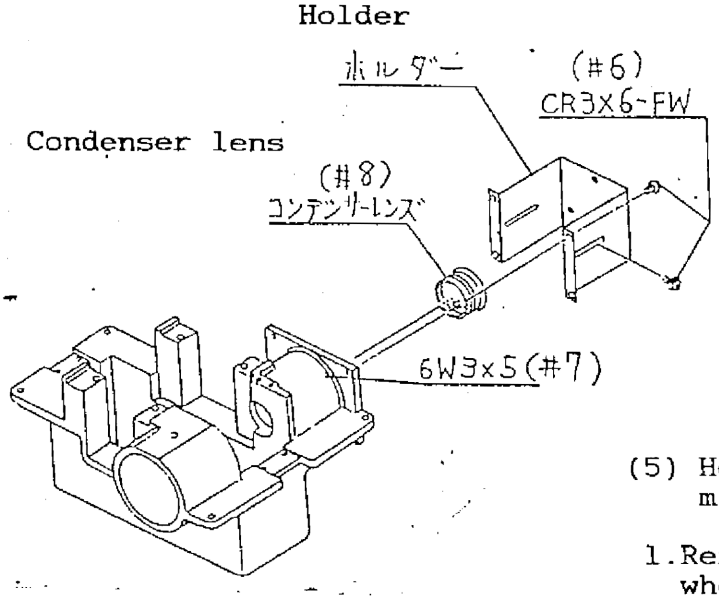
Procedure

(4)How to change the condenser lens

1.Remove the sight CR 3x6-FW(#6) screws.

2.The condenser lens is removed when the 6W 3x5(#7) screw is loosened.

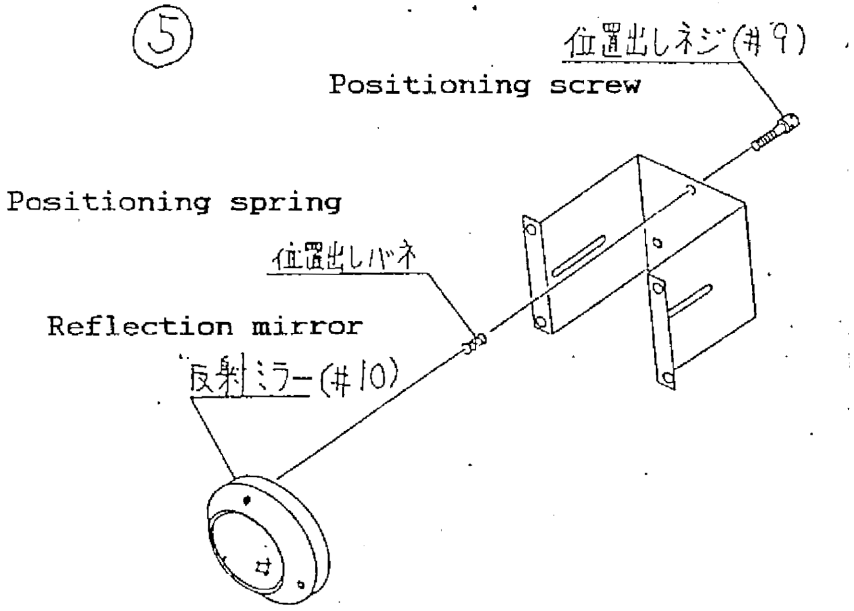
④



(5) How to change the reflection mirror

1.Reflection mirror(#10) is detached when the three positioining screws are removed

⑤



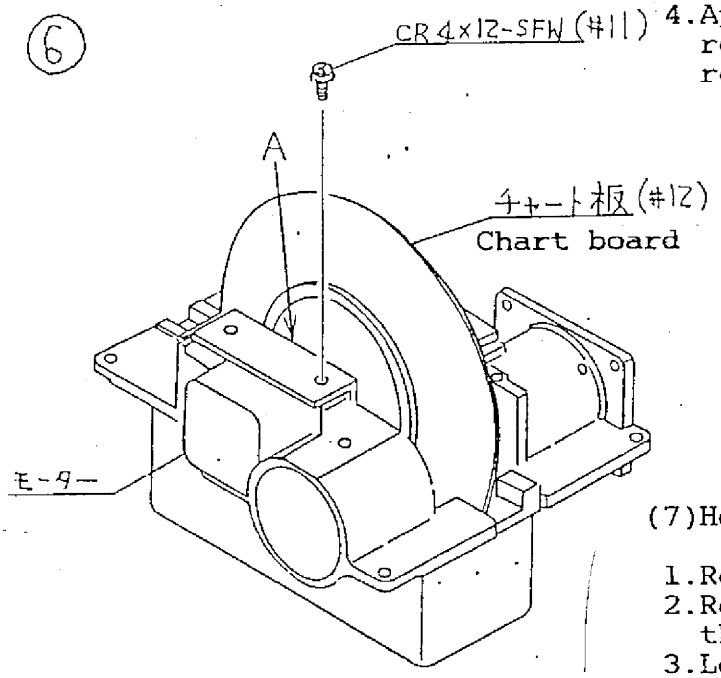
Sketch

Procedure

(6)How to change the chart board

1. Remove the CR 4x11-SFW(#11)
2. Remove the connector of the motor (J1).
3. Loosen the 6W3x5 screw which is located in the A part.
4. Apply paint thinner on the rotation axis of the motor and remove the chart board (#12)

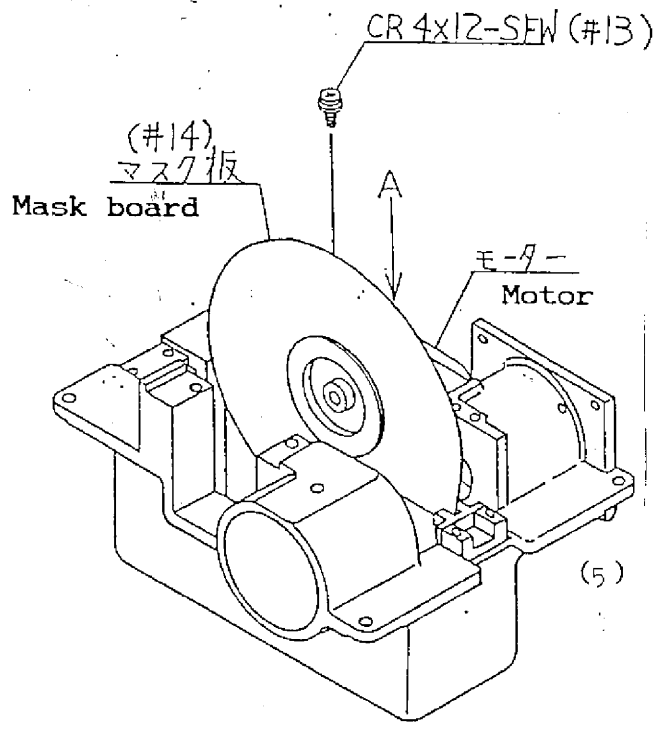
⑥



(7)How to change the mask board

1. Remove the CR 4x12-SFW(#13)
2. Remove the connector of the motor (J2)
3. Loosen the 6W3x5 screw which is located in the A part.
4. Apply paint thinner on the roration axis of the motor and remove the mask board (#14)

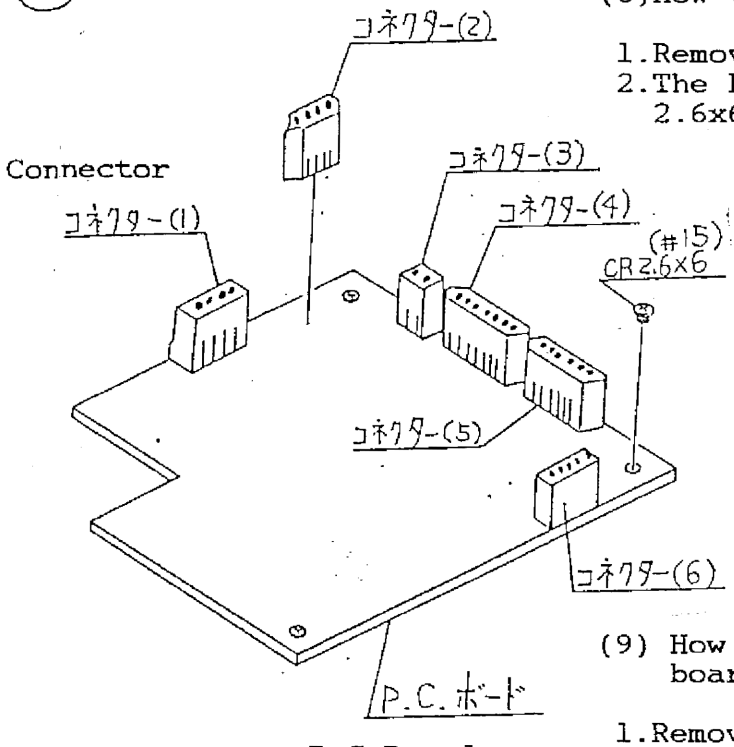
⑦



Sketch

Procedure

(8)



P.C.Board

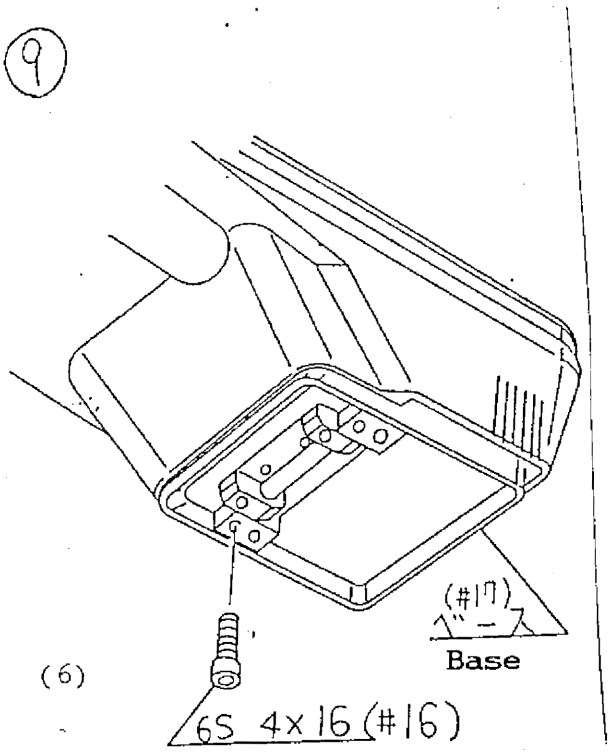
(8)How to change the P.C. board

1.Remove connectors (1-6)
2.The P.C.board detaches when the CR 2.6x6(#15) screw is removed.

(9) How to change the power source board

1.Remove the 6S 4x16(#16) screw and remove the base (#17).
2.The power source board (CP-40 1027) detaches when the CR 3x5 screw on the unit stand is removed.

(9)



Sketch

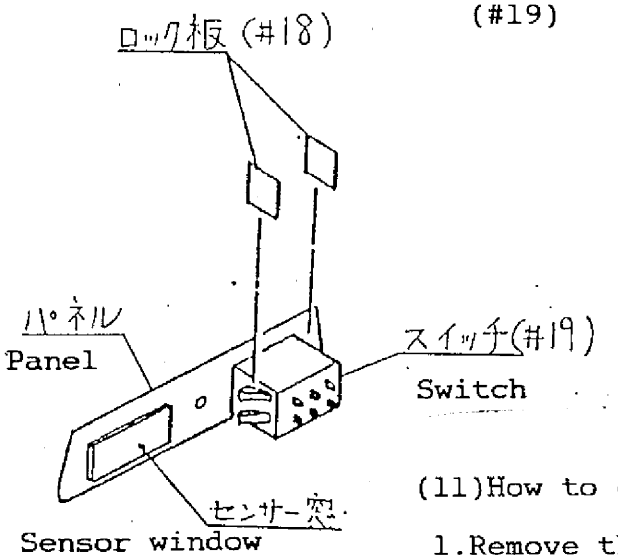
Procedure

(10)How to change the main switch

1. Pull out the(#18)(CP-40 1039) lock boards.
2. Take off the solder which is on the switch and pull out the switch by raising its pawl (#19)

(10)

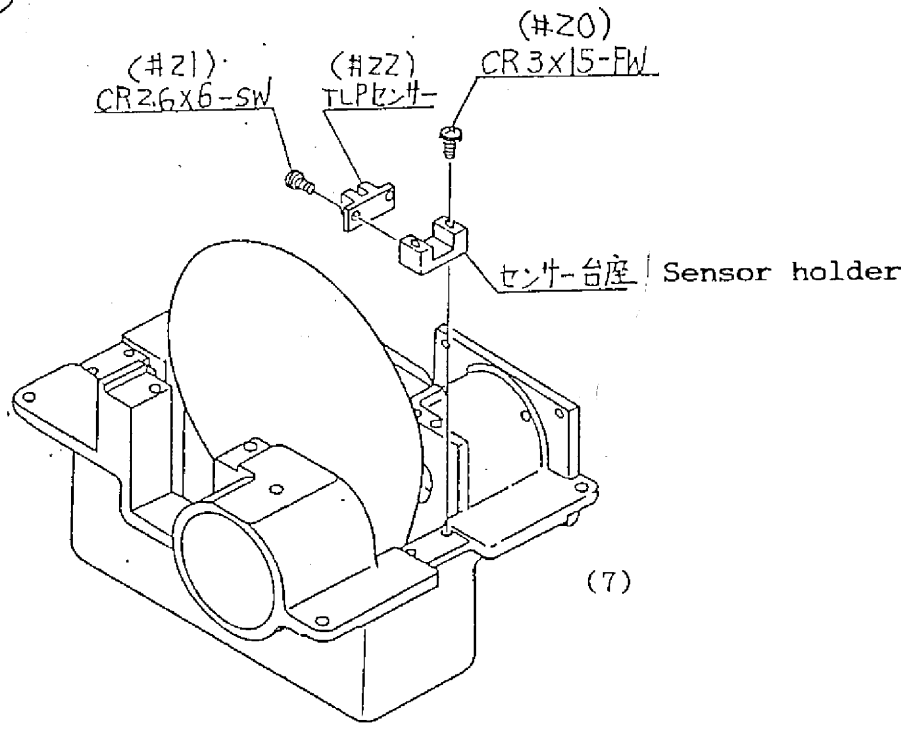
Lock board



(11)How to change the sensor

1. Remove the connector of the sensor (J3,J4)
2. Remove the CR 3x15-FW(#20)screw
3. The sensor(#22) detaches when is removed.
   remove the mask board (#14)

(11)



How to adjust the chart board and the mask board(refer to CP-40 part list.)

1. Tighten the(CR4x12-SFW) screw which holds the bracket (CP-40 1011) in place.

2. Insert the connector of the motor into J1, J2.

3. Put the chart board and the madk board between the sensors.

(Note) (1) Set the chart board and the mask board as closely as possible.

(2) Be sure that the pola dileter, the R.G.filter which in on the chart board, and the mask board are not touching the sensor and the(CP-40 1011) bracket.

4. First, tighten one of the(6W 3x5) screw which is pressing the chart board and the mask board.

5. 0 will be displayed on the screen board.

(Note) 0 will not be displayed when the chart board and the mask board are set diagonally.

6. Adjust the up and down position of the screen displayed with the 6-W 3x5 screw.
Adjust the right and left position with the(CR 4x12-SFW) screw which holds the bracket.

7. Lastly, tighten the other (6W 3x5) screw ehich you have not yet tightened in (4) and adjust.

Disassembling of the variable power lens barrel (Refer to CP-40 part list.)

1. Fig.6 (11) Remove four CR4x8 screws.

2. (3) Totally withdraw after removing the back side of the upper lid.

3. Fig.1 (10) Remove CR4x8 SW screw.

4. Make the CR3x5 screw(2) which are on the adjust ring (1) into the up and down position and pull out the variable power lens barrels (1)-(8) from the body (9).

5. Remove the two CR3x5 screws (2) and remove the adjust ring by rotating it.

(Note) Be careful because the key may fall

6. Remove the ring nut (3) by rotating it.

7. Remove the lens(4) by poking it from the opposite side of the lens pipe (8) with something that will not damage it (such as ball-point pen that is plastic plated).

8. Put a new lens in the lens pipe (5), making sure that the convex faces the outside.

9. Fasten it securely with the ring nut (3).

10. After confirming that the key (6) is set in both the top and the bottom of the lens pipe groove (8), screw in the adjust ring (1) until it comes to the position where it fits the screw hole of the key (6).

Then, secure it temporarily with one CR3x5 screw, and reverse it and set another one.

Set both of them firmly by turning and observing the adjust ring.

11. Insert the variable power lens barrel (1)~(8) in the body (9), so the screws are in an up and down position.

12. Confirm the screw hole position by turning the variable power lens barrel and secure it firmly with the CR4x8-SW(10) screws.

13. Confirm whether or not the diode on the board is inserted in the panel hole (5) (if not push the diode into the hole using your finger). Then, cover it with the upper lid (3) putting in the panel side (5) first.

(Note) Be sure that the wiring code of the sensor does not get caught.

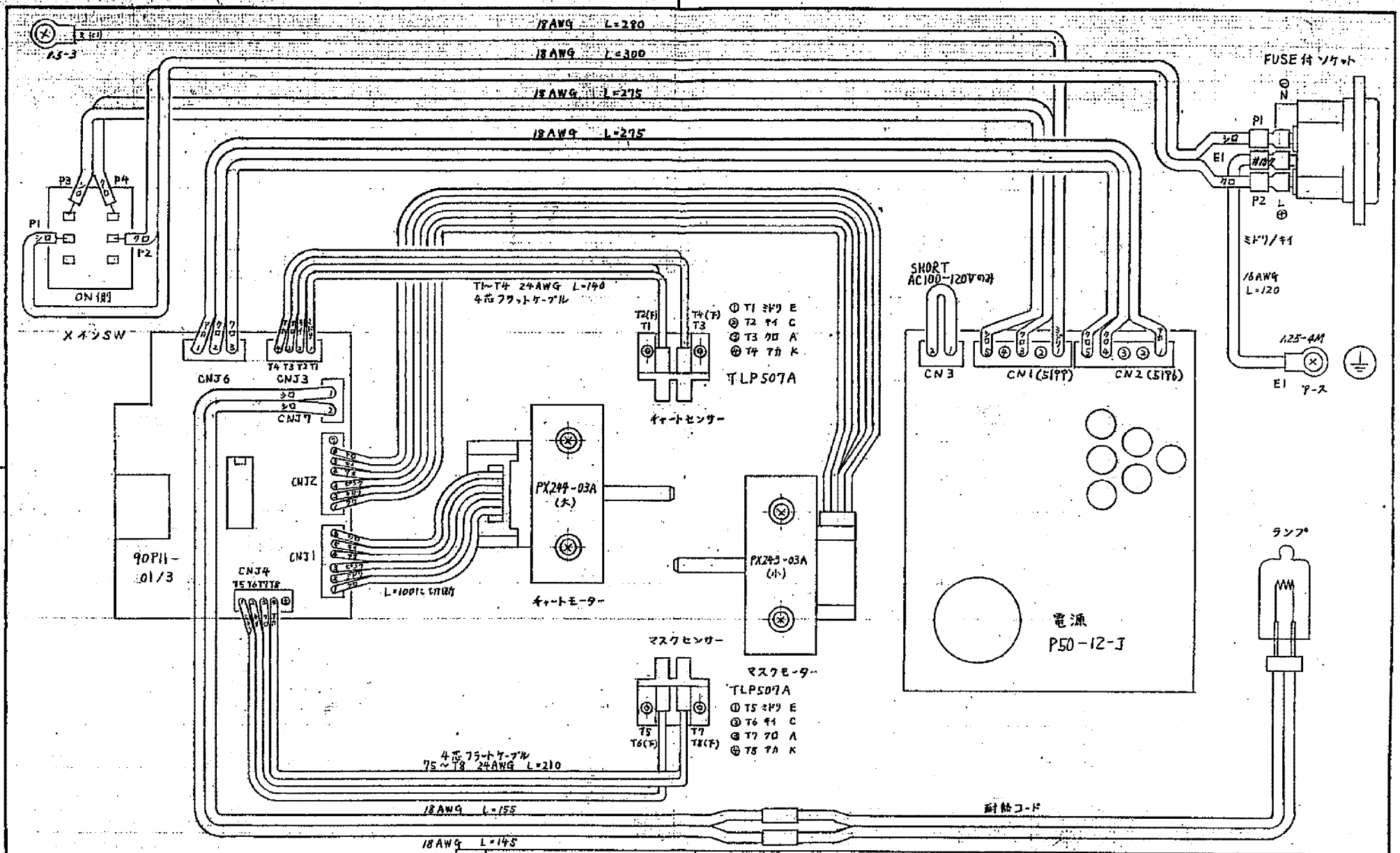
14. (11) Tighten the four CR4x8 screws.

(Note) Be careful not to secure them too tightly.

Chart of the function of the dip-switch of CP-20 and CP-40:

<table>
<tr><th>No. of Dip-switch</th><th>function</th><th>Description</th></tr>
<tr><td>1 , 2</td><td>Remoto control

mode</td><td>
<table>
<tr><th>Mode</th><th>dip-swich of CP-20/40</th><th>PC board of Remoto Unit*</th></tr>
<tr><td>A mode</td><td>SW2-on,SW1-on</td><td>(b)-SH,(a)-SH</td></tr>
<tr><td>C mode</td><td>SW2-on,SW1-off</td><td>(b)-SH,(a)-XX</td></tr>
<tr><td>B mode</td><td>SW2-off,SW1-on</td><td>(b)-XX,(a)-SH</td></tr>
<tr><td>D mode</td><td>SW2-off,SW1-off</td><td>(b)-XX,(a)-XX</td></tr>
</table>
*SH=jumper shut *XX=jumper open
on PC board of Remoto Unit (Control Box)
</td></tr>
<tr><td>3,4,5</td><td>Distinguish CP-20 or Cp-40</td><td>CP-20 SW3-on
CP-40 SW5-on,SW4-off,SW3-off</td></tr>
<tr><td>6</td><td>Auto power off function on / off</td><td>SW6-on "Auto off function" ON
(Auto power off approx. 10 min. with no operation)
SW6-off "Auto off function" OFF</td></tr>
<tr><td>7</td><td>Buzzer on /off</td><td>SW7-on: Buzzer ON
SW7-off: Buzzer OFF</td></tr>
<tr><td>8</td><td>Test Mode</td><td>SW8-off: Normal (Operation) mode
SW8-on: Test Mode
SW1-on:Adjustment mask's position
SW1-off:Adjustment chart's position</td></tr>
<tr><td colspan="3">Please note that new function of re-setted dip-switchs will effective after re-seting of the Main Switch.</td></tr>
</table>



記号	記事	日付
△		
△		
△		
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仕上程度 / 個数 / 材質 / 処理

尺度 / 第3角法

一般公差	A	B
16以下	±0.05	±0.1
16~63	±0.1	±0.2
63~250	±0.2	±0.3

名称 CP-20/30/40 実体配線図

図番 — 部番 — 改訂 —

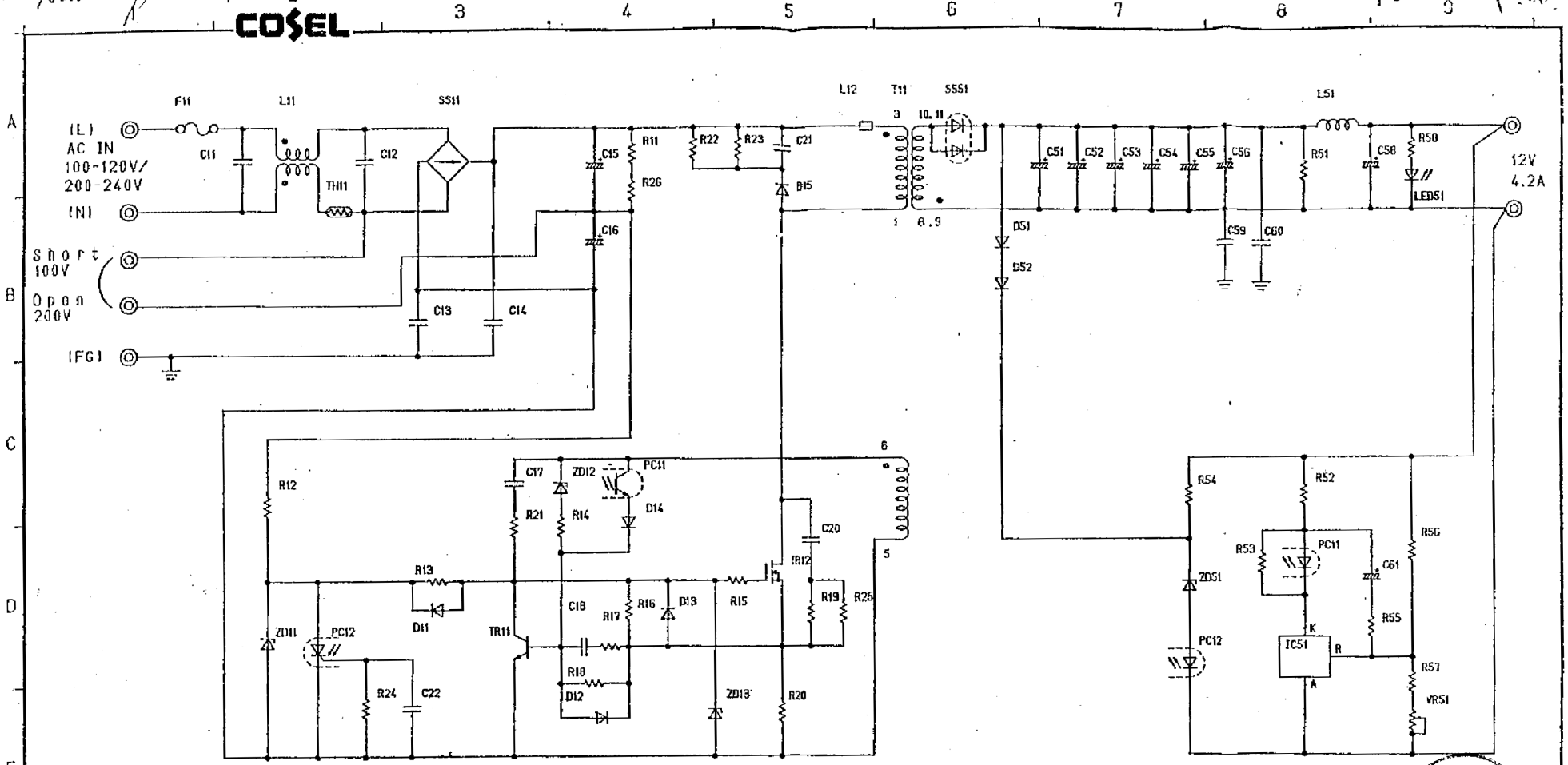
承認 設計 製図

作成日付 3・12・13・ 株式会社 東和

New Type Power PCB

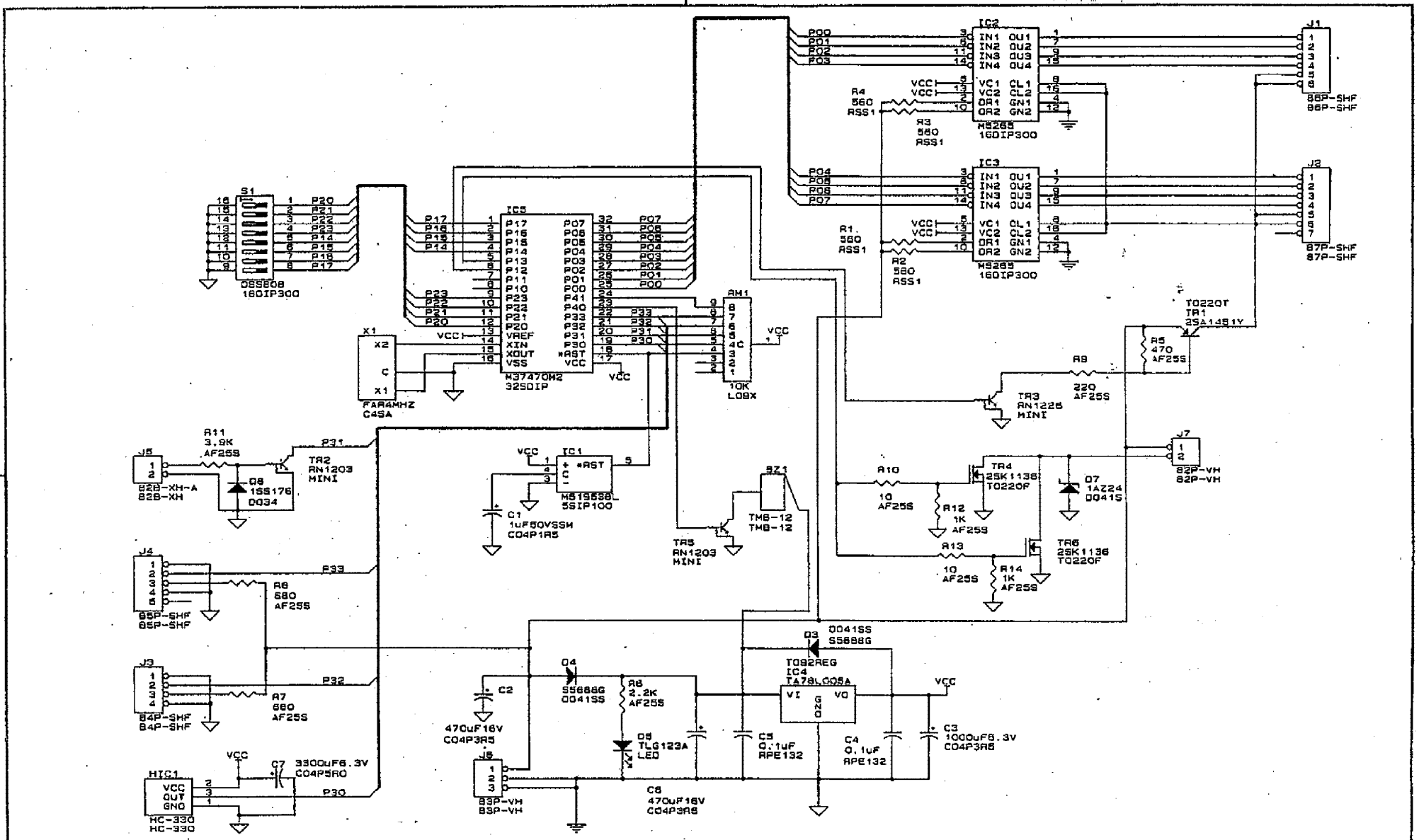
COSEL

Power PCB



APPROVED BY H. Ohura	CHECKED BY H. Ohtsubo	DATE: SEPTEMBER 7, 1988	
DESIGNED BY H. Ohtsubo	DRAWN BY K. Shiraishi	MODEL NO. P50E-12	
SCALE		TITLE: SCHEMATIC DRAWING	
		DRAWING NO. AEE-0131	

1. 6. 15



△		・ ・	仕上程度	尺度 ／	第3角法	名称 CP20 Control Unit	承認
△		・ ・	鋼鉄	一般 16以下	A ±0.05 B ±0.1		設計
△		・ ・	材質	公差 16～63	±0.1 ±0.2	図番 CP-2030-40	部番 —	改訂 —	製図
△		・ ・		63～250	±0.2 ±0.3		
記号	記事	日付	処理				

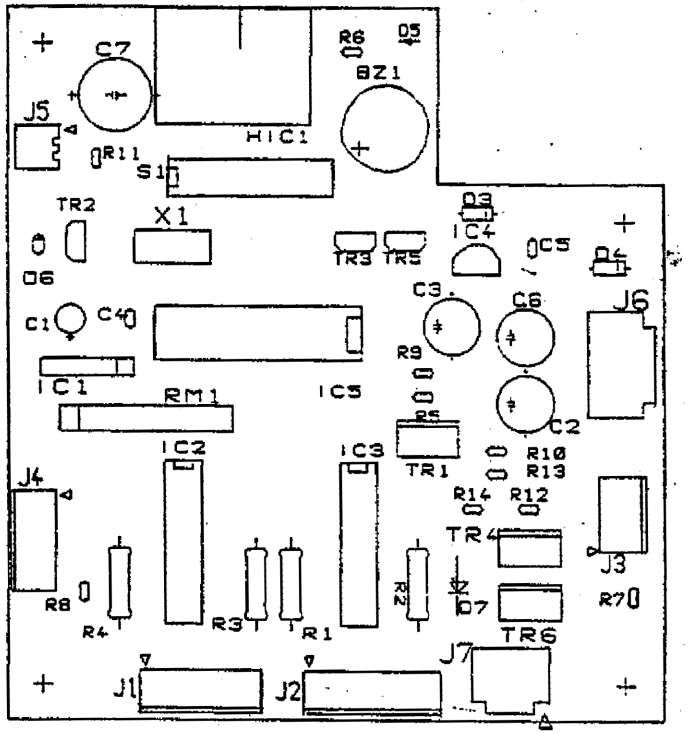
作成日付 ・ ・ ・

株式会社 東和

New Type Main PCB

New XTUPCO

NOTE



記号	記事	日付
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仕上程度	尺度	第3角法	
個数	一般公差	16以下	A ±0.05 B ±0.1
		16～63	±0.1 ±0.2
材質		63～250	±0.2 ±0.3
処理			

名称

図番 CP-2030-40　部番　改訂 —

承認　設計　製図

作成日付 ・ ・ ・

株式会社 東和